

# What Do the Inside Parts of Leaves Look Like?

A leaf is one of the organs of a plant. The main function of a leaf is to make food for the rest of the plant. The food is carried to other plant parts. What parts of a leaf make and carry food?

Since leaves are organs, they are made of many different kinds of tissues. In leaves these tissues appear as layers of cells. Each tissue has a specific function and the shape of the cells in the tissue is related to its function. Some cells look like small boxes stacked side by side, while others are long and balloon-shaped. Certain cells are round and loosely packed while others look like small tubes stacked together.

## Class Set

### GOALS

In this exercise, you will:

- build a model of the structure of a leaf.
- compare the model with the cells of a leaf as seen through the microscope.

### MATERIALS

scissors

1 sheet white paper

prepared slide of leaf

colored pencils: red, blue, purple, yellow,

microscope tan, light green, dark green

transparent tape

### PROCEDURE

#### Part A. Making a Model of a Leaf

- Figure 1 shows the different cell layers of a leaf. Your teacher will provide you with a copy for you to color as follows:
  - waxy layer— orchid (purplish)
  - lower epidermis layer— brown
  - palisade layer—dark green
  - phloem— navy blue (darkish blue)
  - upper epidermis layer—yellow
  - spongy layer—light green
  - xylem—red
  - guard cells—dark green
- Cut out the <sup>only 4</sup> six layers of your colored copy of Figure 1. Cut along the dotted lines or follow the outlines of the cell layers.
- Assemble your model of a leaf using Figure 13, Ch.22 your text.
- Starting with the upper epidermis, tape each layer onto the blank sheet of paper. (HINT: The xylem and phloem fit together like parts of a puzzle.)
- Label your leaf model by using the key in step 1.

see pg. 644

#### Part B. Examining the Tissues of a Leaf

- Examine the prepared slide of a leaf cross section on the low power of a microscope.
- Locate and identify the six cell layers in the leaf section. Use p. 644
- Draw a small section of the leaf that you see through the microscope on low power in the space provided. Label the parts of this leaf drawing by using the key in step 1.

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